

June 22, 2009 Project No. 1155.010

Ms. Jennifer L. Wiley, PG, CEM
THE BOEING COMPANY
Environment, Health & Safety –
Environmental Remediation
4501 Conant Street, M/C D851-0097
Long Beach, California 90808

Field Data Report
June 2009 Groundwater Sampling
Quarterly/Semiannual Monitoring at Building 2 Area
Waste Discharge Requirements Order No. R4-2007-0040
Boeing Real Property Management Former C-6 Facility

Boeing Real Property Management Former C-6 Facility

Los Angeles, California

Dear Ms. Wiley:

This report has been prepared by Avocet Environmental, Inc. (Avocet) to summarize and present the field data collected during the June 2009 groundwater monitoring event at the Boeing Real Property Management (RPM) Former C-6 Facility in Los Angeles, California. The June 2009 monitoring included sampling for only the Building 2 WDR program. The monitoring was conducted pursuant to and in accordance with the following:

Avocet Environmental, Inc., May 26, 2009, Technical Memorandum, June 2009 Groundwater Sampling and Analysis Plan, Quarterly/Semiannual Monitoring at Building 2 Area, Waste Discharge Requirements Order No. R4-2007-0040, Boeing Corporate Real Estate Former C-6 Facility, Los Angeles, California (Attachment 1).

California Regional Water Quality Control Board, Los Angeles Region (LARWQCB), August 22, 2008, Approval of Revised Monitoring and Reporting Program CI-9310, Individual Waste Discharge Requirements Order No. R4-2007-0040, Boeing Corporate Real Estate, Former C-6 Facility, 19503 South Normandie, Los Angeles, California (File No. 95-036; SLIC No. 0410; Site ID No. 1846000).

Avocet Environmental, Inc., February 19, 2009, 2009 Groundwater Monitoring Work Plan, Boeing Former C-6 Facility, 19503 South Normandie Avenue, Los Angeles, California.

Field activities performed during the June 2009 monitoring event are discussed in the following sections. Figure 1 (Attachment 1) presents the locations of the groundwater monitoring wells included in the programs.

16 Technology Drive, Suite 154 w Irvine, California 92618-2327
Phone 949.296.0977 * Fax 949.296.0978
www.avocetenv.com

Field Data Report June 2009 Groundwater Sampling

Boeing RPM Former C-6 Facility Los Angeles, California Page 2 June 22, 2009

GROUNDWATER SAMPLING ACTIVITIES

Groundwater monitoring in June 2009 was conducted in accordance with Revised Monitoring and Reporting Program CI-9310 (MRP), which is part of Individual WDR Order No. R4-2007-0040 (August 22, 2008). The Quarterly/Semiannual Building 2 WDR Monitoring Program called for fluid level measurement and sample collection from 6 wells. In accordance with the revised MRP, six wells were gauged for fluid levels and sampled. These six wells consist of the four Group B Wells (CMW026, IRZCMW002, IRZCMW003, and MWC024), the one Group C Well (CMW002), and the one Group D Well (IRZCMW001). A map showing the Building 2 WDR well locations is provided in Figure 1 (Attachment 1). All wells were also inspected for any damage or missing materials and described on field data forms. Field data forms are included in Attachment 2.

Six Building 2 WDR wells were purged and sampled on June 9, 2009 using dedicated low-flow bladder pumps and flow-through cells. All WDR wells were purged for sampling using low-flow (0.20-0.25 liters/minute) methods. A groundwater sample from one of the six WDR monitoring wells was tested for ferrous iron using a HACH DR/890 Colorimeter. A malfunction of the Colorimeter prevented testing of samples from the other wells. The field instruments were calibrated by EQUIPCO prior to the event and the calibration data sheets are included in Attachment 2.

All of the wells scheduled for water level measurement were gauged for depth to water on June 9, 2009 using a Solinst electronic water level sounder. The wells were also inspected for any damage or missing materials. Apart from one missing bolt (IRZCMW003), the wells were in good condition. Monitoring Well IRZCMW003 was fitted with a replacement bolt.

At the completion of purging, groundwater samples were collected in laboratory supplied containers, properly labeled, identified on the chain-of-custody, and submitted to TestAmerica Laboratory, an appropriately certified environmental testing laboratory located in Irvine, California. A normal 10-day turn-around time was requested for the lab analyses. For the WDR wells, groundwater samples were analyzed for one or more of the following:

- Volatile organic compounds (VOCs) by EPA Method 8260B,
- Total organic carbon (TOC) by EPA Method 9060,
- Volatile fatty acids (VFAs) by IC Method 8M23G (subcontracted by TestAmerica to Microseeps, Inc., Pittsburg, PA),
- Dissolved gases (ethane, ethene, and methane) by RSK 175 (subcontracted by TestAmerica to Air Technology Laboratory, Inc., City of Industry, CA),
- Dissolved minerals (sulfate, nitrate, nitrite, and chloride) by EPA Method 300 Series.
- Total Alkalinity by EPA Method 310,
- Quantitative polymerase chain reaction (qPCR) analysis for DHC 16S rRNA gene and functional genes tceA, bvcA, and vcrA (subcontracted by TestAmerica to North Wind, Inc., Pocatello, ID, (four Building 2, Group B wells only), and



Field Data Report June 2009 Groundwater Sampling

Boeing RPM Former C-6 Facility Los Angeles, California Page 3 June 22, 2009

• Total dissolved solids (TDS) by EPA Method 160.1 (for the Group C and D wells only).

Purge water (approximately 6 gallons) was placed in one appropriately labeled 55-gallon drum located adjacent to the treatment compound. The analytical results will be used to profile the purge water for transport to an appropriate off-site facility for treatment and disposal. Management, containerization, staging, profiling, and transportation will be conducted in accordance with procedures established by Boeing.

If you have any questions regarding this report or require additional information, please do not hesitate to call.

Respectfully submitted,

AVOCET ENVIRONMENTAL, INC.

Michael A. Rendina, C.Hg.

Principal

MAR:sh

Attachments:

Attachment 1: June 2009 Groundwater Sampling and Analysis Plan

Attachment 2: Field Data Forms

S:\Projects\1155Boeing Former C-6 Facility\Groundwater Monitoring\December 2008 Field Data ReportFDR_December 2008 121608.docx





June 2009 Groundwater Sampling and Analysis Plan





May 26, 2008

Project No. 1155.010

Ms. Jennifer Wiley, P.G.
THE BOEING COMPANY
Environment, Health & Safety –
Environmental Remediation
4501 East Conant Street, M/C D851-0097
Long Beach, California 90808

(via electronic mail only)

Technical Memorandum

June 2009 Groundwater Sampling and Analysis Plan Quarterly/Semiannual Monitoring at Building 2 Area Waste Discharge Requirements Order No. R4-2007-0040

Boeing Corporate Real Estate Former C-6 Facility
Los Angeles, California

Dear Ms. Wiley:

This memorandum has been prepared by Avocet Environmental, Inc. (Avocet) and presents the sampling and analysis plan (SAP) for the June 2009 groundwater monitoring event at Boeing Real Property Management's (RPM's) Former C-6 Facility in Los Angeles, California. This monitoring is being conducted pursuant to and in accordance with California Regional Water Quality Control Board, Los Angeles Region (LARWQCB) Approval of Revised Monitoring and Reporting Program CI-9310, Individual Waste Discharge Requirements (WDR) Order No. R4-2007-0040 (the WDR Order) issued August 22, 2008.

Under the revised WDR Order, the June 2009 monitoring event includes sample collection from the six Former Building 2 periodic slug injection monitoring wells. This event marks the third of four quarterly monitoring events specified in the revised WDR Order.

Field Activities

The June 2009 WDR groundwater monitoring event will include only the former Building 2 portion of the program – the former Building 1/36 portion of the monitoring program is now on a semiannual schedule with the next event planned for September 2009. The Building 2 WDR groundwater monitoring program is summarized in Table 1. A map showing the well locations is provided in Figure 1. The quarterly former Building 2 WDR monitoring program calls for fluid level measurement and sample collection from 6 wells. These six wells consist of the four Group B wells (CMW026, IRZCMW002, IRZCMW003, and MWC024), one Group C well (CMW002), and one Group D well (IRZCMW001). A list of the WDR wells to be monitored, broken out by Group, is provided in Table 1. A map showing the former Building 2 WDR well locations is provided in Figure 1.

16 Technology Drive, Suite 154 m Irvine, California 92618-2327
Phone 949 296 0977 m Fax 949 296 0978
www.avocetenv.com

Technical Memorandum June 2009 Groundwater Sampling and Analysis Plan

Boeing Real Property Management, Former C-6 Facility Los Angeles, California Page 2 May 26, 2009

The scope of work will include all tasks associated with collecting the field measurements and laboratory samples required to comply with the WDR Order and 2009 Work Plan. In brief, these activities will include water level measurements, groundwater well purging and sampling, and sample analyses. Additional activities such as pre-field documentation, waste management, and reporting are addressed in the Work Plan. Specifically, the June 2009 groundwater monitoring activities will include the following:

- Prior to any disturbance, depth to groundwater will be measured to the nearest one-hundredth of a foot in each of the 6 wells using a Solinst (or equivalent) well sounder. Monitoring well vapor concentrations will be measured with a photoionization detector (PID) following removal of the well cap. All water level measurements will be collected within a single 24-hour period using calibrated water level sounders. Water levels in wells with submerged screens that are noted to be under pressure upon removal of the well cap will be allowed time to stabilize prior to water level gauging.
- Groundwater samples are scheduled for collection from 6 WDR wells (Table 1) during the June 2009 monitoring event. Prior to sampling, the wells will be purged using low-flow methods to assure representative samples are collected from the formation. During purging, the flow rate at each location will be maintained between 0.1 and 0.5 L/min, dependent on site-specific and well-specific factors as drawdown is not to exceed 0.3 feet in any well.
- During well purging, biogeochemical parameters including pH, temperature, electric conductivity (EC), dissolved oxygen (DO), and oxygen-reduction potential (ORP) will be periodically measured using a flow-thru cell and QED multiparameter meter or equivalent. In addition, turbidity will be measured using a Lamotte 2020 turbidimeter; ferrous iron (Fe(II)) will be measured using a Hach DR890 Colorimeter; and approximately ten percent of the dissolved oxygen measurements will be confirmed using a CHEMetrics, Inc. test kit. Purging will continue until three consecutive measurements are within +/-0.2 for pH, +/-3% for EC, +/-10% for DO, and +/-20 mV for ORP (ASTM, 2002).
- At the completion of purging, groundwater samples will be collected in laboratory-supplied containers, labeled in accordance with Boeing's Data Management Plan (CH2M Hill, 2007), placed on ice in a cooler, identified on the chain-of-custody, and submitted to appropriately-certified environmental testing laboratories.

Samples collected from the Building 2 WDR wells will be analyzed for one or more of the following as detailed in Table 1:

- volatile organic compounds (EPA Method 8260B);
- total organic carbon (EPA 9060);
- volatile fatty acids by IC Method 8M23G (Microseeps, Inc., Pittsburg, PA);



Technical Memorandum June 2009 Groundwater Sampling and Analysis Plan

Boeing Real Property Management, Former C-6 Facility Los Angeles, California Page 3 May 26, 2009

- dissolved hydrocarbon gases (ethene, ethane, and methane by RSK 175);
- total alkalinity (EPA Method 310.1);
- anions (sulfate, nitrate, nitrite, and chloride by EPA Method 300 Series);
- total dissolved solids (EPA Method 160.1); and
- Quantitative Polymerase Chain Reaction (qPCR) analysis for DHC 16S rRNA gene and functional genes tceA, bvcA, and vcrA (North Wind, Inc., Pocatello, ID).

Closing Remarks

Groundwater monitoring is scheduled to commence at the site on Tuesday, June 9, 2009. Avocet Environmental, Inc. appreciates the opportunity to be of service to Boeing Real Property Management. If you have any questions, please do not hesitate to call.

Respectfully submitted,

AVOCET ENVIRONMENTAL, INC.

Michael A. Rendina, P.G.

muhael a.

Principal

MAR:sh Enclosure

cc: Mr. Joe Weidmann – Haley & Aldrich

Mr. Ravi Subramanian - CDM

S:\Projects\1155 Boeing Former C-6 Facility\Groundwater Monitoring\SAF Jun 09 1155\Technical Memorandum SAF B2 June2009_052809.docx



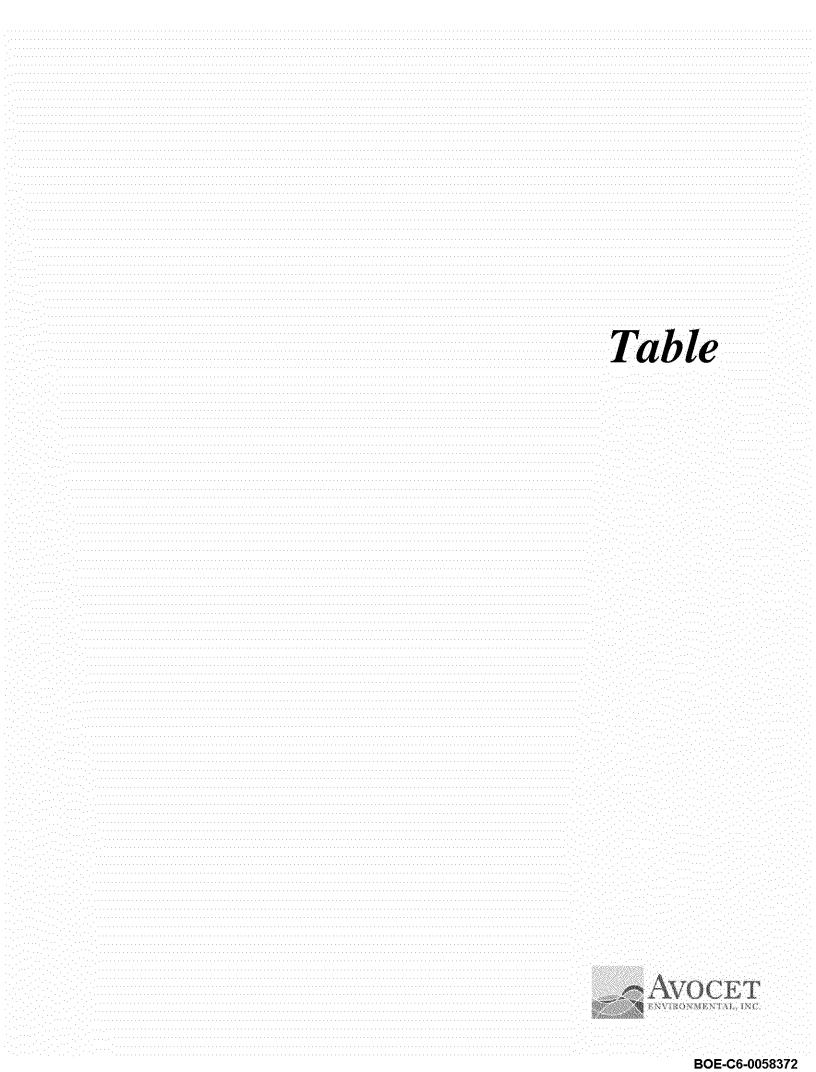


Table 1

June 2009 Former Building 2 WDR Groundwater Monitoring Program

BRPM Former C-6 Facility,

Los Angeles, California

Well Informatio	n			Field Pro	gram				I	aboratoi	ry Progra	m			
Well Name	Sampling Group	Hydrostratigraphic Unit	Total Select VOCs Concentration (µg/l)	Sampling Order	Water Level Measurement	Field Parameters	VOCS EPA 8260B	TOC EPA 9060 Modified	Volatile Fatty Acids IC Method 8M23G (Microseeps)	Dissolved Hydrocarbon Gases (DHGs) Methane, Ethane, Ethene RSK 175	Alkalinity EPA 310.1	Anions (NO ₃ , NO ₂ , CI, SO ₄) EPA 300.0	Total Dissolved Solids EPA 160.1	DHC 16S rRNA gene and functional genes teeA, bvcA, and vcrA: by qPCR analysis (North Wind)	Comments
Group A Wells															
IRZC0001 & IRZC0003 through IRZC0020	Α	C-Sand.	,	-											Not accessible for sampling
Group B Wells															
CMW026	В	C-Sand	905	2.	Χ.	. X	,X	·X	Χ.	Χ.	. X	X.		Χ.	Q3 WDR Monitoring
IRZCMW003	В	C-Sand	11,266	6	X-	X	,X	·X	X.	X-	X	X.		X	Q3 WDR Monitoring
IRZCMW002	В	C-Sand.	2,617	5.	.X-	X.	·X	х	X	X-	X.	Х		.X ·	Q3 WDR Monitoring
MWC024	В	C-Sand	2,592	4	X.	. X	X	X	X.	X.	. X	X.		X.	Q3 WDR Monitoring
Group C Wells	Γ	T		-		1	ı			T	T	1		r	
CMW002	С	B-Sand	300	1	X.	.X	, X	·X	X.	X.	X	X.	Х	X.	Q3 WDR Monitoring
Group D Well	_	I		I -	ı	I	ı	Γ	ı	i .	Ι	ı	ı	T T	
IRZCMW001	D	B-Sand	1,591	3.	·X	X	. X	X	X.	X.	X	X.	X	X.	Q3 WDR Monitoring
Quality Control Samples					ı	1	I .		1	ı	T	Г		ı	
Duplicates (1 per 20 wells)							x:(est. 1)								
Rinsate Blanks (1 per day)							(est. 0)								dedicated pumps
Trip Blanks (1 per cooler)							x (est. 1)								
			·To	otals:	.6-	.6	8	.6	6.	6.	.6	6	2.	6·	

Notes: Field Parameters = pH, DO, ORP, EC, temp, turb, and ferrous iron.

pH = Potential of Hydrogen

DO = Dissolved Oxygen

ORP = Oxidation Reduction Potential

EC = Electrical Conductivity

Temp = Temperature

Turb = Turbidity

μg/l = Micrograms per liter

VOCs = Volatile organic compounds

EPA = U.S. Environmental Protection Agency

TOC = Total Organic Carbon

DHGs = Dissolved hydrocarbon gases

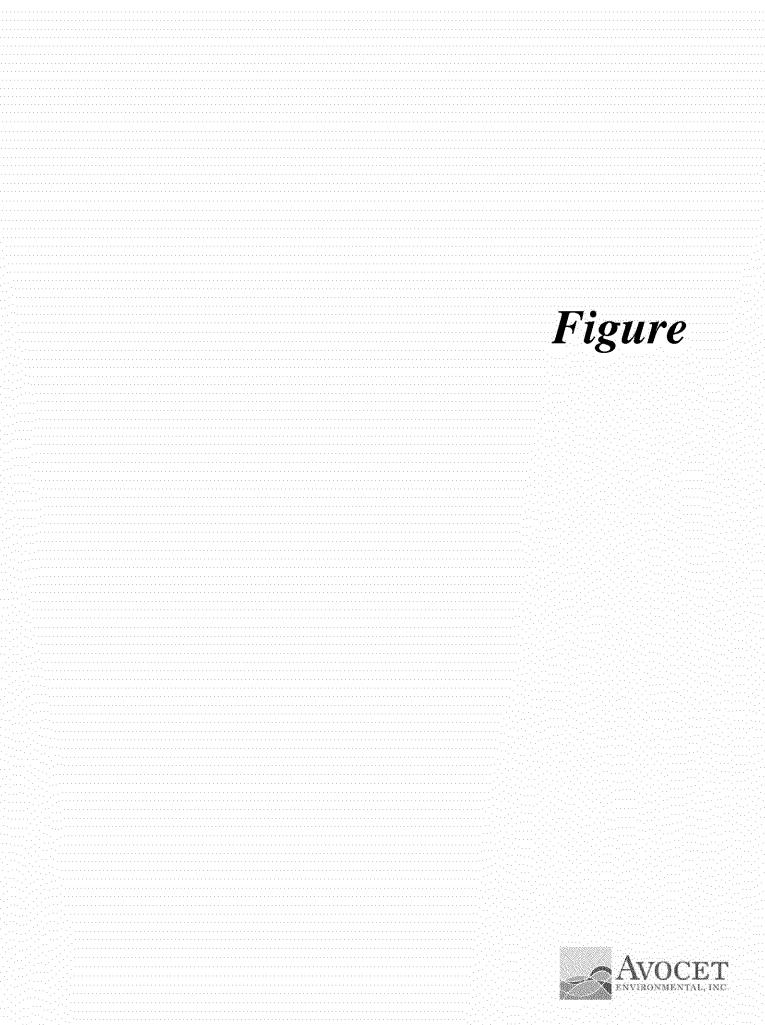
NO₃ = Nitrate, NO₂ = Nitrite, Cl = Chloride, SO₄ = Sulfate

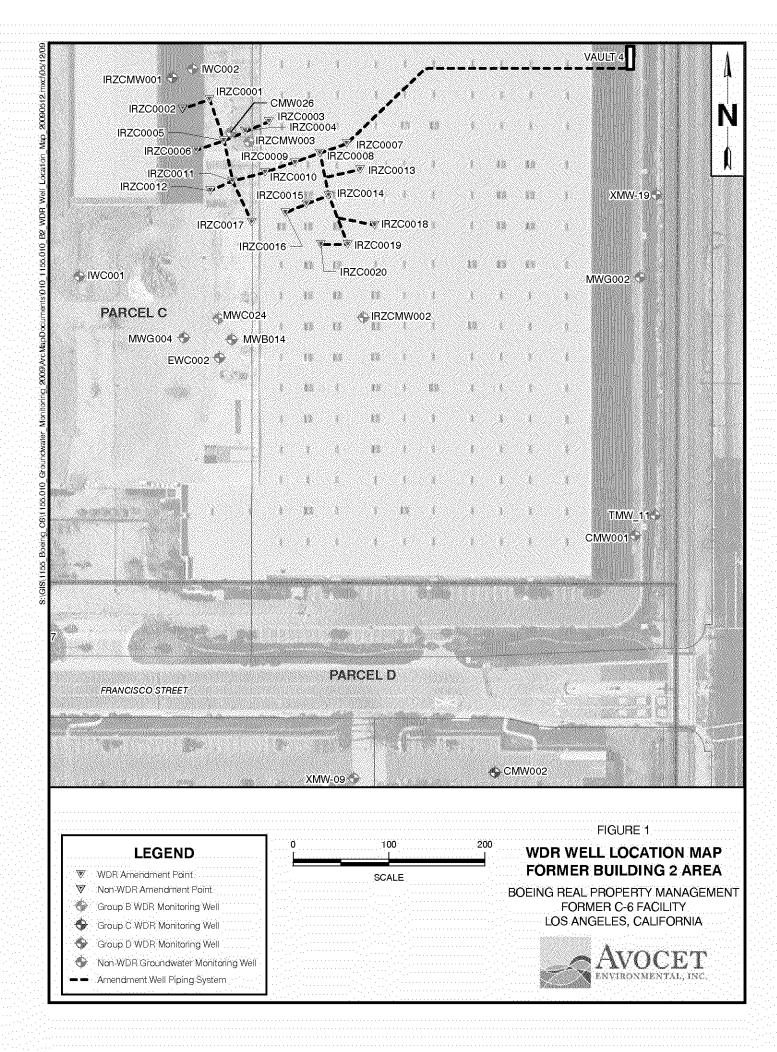
DHC = dehalococcoides spp. strains

qPCR = Quantitative Polymerase Chain Reaction

"Total Select VOCs Concentration" reflects the sum of PCE, TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, and VC (March 2009).







Attachment 2 Field Data Forms





Project Nan	ne: Boei	ng C-6 Fa	cility,	WDR Sar	npling, June	e-09			te:		619109			
Project No.:			11:	55.010				Pro	epared	by:	368			
Well Identif	ication:		IRZC	C00MM				We	eather:	01/4		00\		
Measureme	nt Point Descrip	tion:	•<	TOC-N				Pu	mp Inta	ike:	<u> Cos</u>	Screen:	92	- 117
A	В		C		D = C - E	3	E =	B - A	G	= D x F	$\mathbf{H} = 25 \times F$	l = (top sci	reen-B) x F	
Depth to LNA (ft-bmp)	APL Depth to St Water Lev (ft-bmp)	/el we	II Total (ft-bm		Water Colu Height (f			APL ness (ft)	i	Casing ie (gallons)	Screen Volume (gallons)	Above Volum	Screen le (gal.)	Total Purge Volume (gal.)
	59.5	19	113	-	57.	} (N/A	N/A	N	/A	N/A
					ons/Foot			Field Eq	uipment	t: QED, De	edicated Low-fl	ow		
Well Di	iameter (inches) = 4	().75	2	(4)	6		Purge M	ethod:	Micropurge				
F - Gallo	ons per foot of cas	ing (0.02	0.16	0.65	1.47		Well Co	ndition:	Mrssm	s I bolt	Replaced	W 5/4	x ll x 13
Time	Flow Controller Settings	Volume Purgeo (Liters)	-	ow Rate mL/min)	Water Level (ft-bmp)	Temper (°C [+/- 10	erature Cor		ctivity cm) 0%]	Dissolved Oxygen (mg/L) [+/- 10%]	pH [+/- 0.1 pH]	ORP	Turbidity (NTU) [+/- 10%]	Observation
	F	Previous St	abilized	Paramete	rs: 03-12-09			0.0	97	0.260	7.29	-80.00	2.60	
1252	10/50@ 8075	-	•	-250	59.29	21.6	7	0.9	98	0.67	7.07	- 250	3.11	Colorbers
1255		750		8	59.32	21.6	6	0.9	196	0.56	7.10	- 254	3.02	•
1258		1500			59.34	21.6	5	0.0	97	0.39		- 260	2.91	68
1301		2250)		51.37	21.6	,4	0.9	95	0.28	7.20	-267	2.80	9-6
1304	9/4	- 3000	,		59.40	21.		0.0	195	0.20	7.21	- 270	2.79	98
1307		3751)		5941	21.	53	0.0	194	0.14	7.21	- 274	2.78	2.0
				-										
Purge Start Time	Purge End Time	Average Flow (mL/min)	V	Total olume turged (Liters)	Total Casing Volumes Purged	80% Recovery Wa Level Depth (Dx0.20) + B			Sampli (ft l	Level at ing Time bmp)	Sample Collection Time		ımple Identif	
1252	1307	~250	d	3.75	N/A		NA	,	59	.41	1307	IRZCMW00	3_WG20090	609_01
	its) [stabilization o	criteria]									DU DRUM NO			



Project Nan		ng C-6 Fac			npling, Jun	e-09		Da		6					
Project No.:				5.010					epared		BCB.	/ _	8		
Well Identifi				/W002					eather:		ereast	e.			
Measureme	nt Point Descript	ion:		<u> </u>				Pu	mp Inta	ake:	<u> </u>		Screen:	96	- 121
Α	В		С		D = C - E	3	E =	B - A	G	= D x F	H = 25	x F	I = (top sc	reen-B) x F	
Depth to LNA (ft-bmp)	APL Depth to Sta Water Lev (ft-bmp)		Total E		Water Colu Height (f			APL ness (ft)		Casing ne (gallons)	Scree Volum (gallons	е	1	Screen ne (gal.)	Total Purge Volume (gal.)
	63.3	3	121		57.6	52				N/A	N/A		N	/A	N/A
				Gallo	ons/Foot			Field Ed	uipmen	t: QED, D	edicated Lov	-flow	1		
Well Di	ameter (inches) = 4	0.	75	2	4	6		Purge N	ethod:	Micropurge)			· · · · · · · · · · · · · · · · · · ·	
F - Gallo	ons per foot of casi	ng 0.	02	0.16	0.65	1.47		Well Co	ndition:						
Time	Flow Controller Settings	Volume Purged (Liters)		v Rate ∟/min)	Water Level (ft-bmp)	(°C) (Condu (mS/ [+/- 1	cm)	Dissolve Oxygen (mg/L) [+/- 10%]	pH [+/- 0.1 p	н]	ORP (mV) [+/- 10%]	Turbidity (NTU) [+/- 10%]	Observations
	Р	revious Stat	ilized P	arameter	s: 03-12-09			1.8	19	0.360	6.65		-150.00	1.30	
1121	10 55 @ gozsi		-2	50	63.38	20.9	L	1.6	5	0.97	6.5	2 -	- 162	2.31	coloiless
1124	1	750		9	63.72		19	1.0	17	0.62	6.4	5 -	-176	2.01	88
1127	THE CONTRACTOR OF THE CONTRACT	1500			63.81	21.6)(1.	iġ.	0.31	6.4	6 -	- 191	1.77	•
11 30		2250			63.88	21.0	05		81	0.2	2 6.4	5.	- 196	1.44	6.6
1133		3000			63.92	21.0)6	1.	19	0.14	6.4	4	- 199	1.42	બ
1136		3750	-	L ,	63.97	21.			19	0.13	6.4	5	- 202	1.41	8.9
									de la constante de la constant						
Purge Start Time	Time	Average Flow (mL/min)	Vol Pui (Lit	otal ume rged ers)	Total Casing Volumes Purged		covery vel Dept (0.20) + I	th	Sampli (ft l	Level at ng Time	Sample Collection Time		Sa	mple Identifi	cation
1121	W36	250	2.	75	N/A		NA		62	.97	1136	II	RZCMW002	2_WG20090	609 01



Project Nan Project No.:		ng C-6 Fac	1155.010	ampling, Jun	ie-09			ite: epared		368			
Well Identif			MWC024					epareu eather:			1 Cont		
	nt Point Descript	ion:	TOC-	A1				mp int		vereast COS	Scree	n: 96	- 121
A	В		C	D = C - i	_D	E = 1			= D x F	H = 25 x		p screen-B) x F	161
A				D -0-1		L - 1		9	- D X F	11 - 20 x	1 - (10	p screen-b) x r	
Depth to LN/ (ft-bmp)	APL Depth to St Water Lev (ft-bmp)	VVAII	Total Depth (ft-bmp)	Water Coli Height (LN <i>A</i> Thickn		1	Casing ne (gallons)	Screer Volume (gallons	AD Vo	ove Screen blume (gal.)	Total Purge Volume (gal.)
~	59.3	4	121	61.6	6				N/A	N/A		N/A	N/A
			• 🥕 Gal	lons/Foot		ı	ield Ec	uipmen	t: QED, D	edicated Low	-flow		
Well Di	ameter (inches) = 4	0.1	75 💆 2	4	6		ourge M	lethod:	Micropurge	!			
F - Gallo	ns per foot of casi	ng 0.0	0.16	0.65	1.47	١	Vell Co	ndition:					
Time	Flow Controller Settings	Volume Purged (Liters)	Flow Rate (mL/min)	Water Level (ft-bmp)	Temper (°C) [+/- 10	erature Cor		ctivity (cm) 0%]	Dissolve Oxygen (mg/L) [+/- 10%]	-	ORP (mV) [+/- 10%	Turbidity (NTU) [+/- 10%]	Observation
	P	revious Stab	ilized Paramete	ers: 03-12-09			1.3	39	0.010	7.15	-57.00		
1010	10[55 @ 8033:		250	59.34	21.8	3	1.8	124	0.99	6.9	2 -146	2.70	cobiless
1013	7	750		59.37	21.7			173	0.72	6.90	-	2.53	۲
1016		1500	Disputation of the	59.39	21.7			494	0.38				¥
1019		2250		59.37	21, =	FL		493	0.33	6.9		2.07	88
1022		3000		54.38	21.3			495	0.29		4 -52	1.91	•4
1025		3750		59.37	21.5	71		494	0.28	6.91	4 - 47	1.75	84
	· 1		T				T						ū
Purge Start Time	Purge End Time	Average Flow (mL/min)	Total Volume Purged (Liters)	Total Casing Volumes Purged	80% Recovery Wa Level Depth (Dx0.20) + B			Sampli	Level at ing Time bmp)	Sample Collection Time		Sample Identif	ication
1010	1025	250	3.75	N/A		NA		59	.37	1025		_WG20090609	9_01
Notes: (uni	ts) [stabilization c	riteria]	•							DU DRUM N	JP: IO:		



Project Nar	ne: Boei	rig C-6	3 Facilit	ty, WDR Sa	mpling, Jun	e-09		Date:			6/9/09			
Project No.				1155.010				Prepa	ared	by:	368			
Well Identif	ication:		IR	RZCMW001				Weath	her:		Ourrest	Cool		
Measureme	nt Point Descript	tion:		TOCH	J			Pump	Inta		605	Screen:	92 -	- 117
A	В			С	D = C	В	E = B	А	G	= D x F	H = 25 x l	= = (top s	creen-B) x F	
Depth to LN/ (ft-bmp)	Depth to St Water Lev (ft-bmp)			otal Depth bmp)	Water Coli Height (LNAF Thicknes			Casing ne (gallons)	Screen Volume (gallons)		e Screen me (gal.)	Total Purge Volume (gal.)
	59.2	bl	9	17	54.3	76	5000			N/A	N/A	ı	N/A	N/A
				Gall	lons/Foot		Fi	eld Equip	ment	:: QED, D	edicated Low-f	low	1	
Well Di	ameter (inches) = 4		0.75	2	4	6	Pı	rge Meth	od: i	Micropurge	· · · · · · · · · · · · · · · · · · ·	·		
F - Gallo	ons per foot of casi	ng	0.02	0.16	0.65	1.47	w	ell Condit	tion:	ರಿಂಂತಿ				
Time	Flow Controller Settings	Pur	ume ged ers)	Flow Rate (mL/min)	Water Level (ft-bmp)	*Tempera (°C) [+/- 10		conductiv (mS/cm) [+/- 10%]	1	Dissolve Oxygen (mg/L) [+/- 10%]	pH [+/- 0.1 pH]	ORP (mV) [+/- 10%]	Turbidity (NTU) [+/- 10%]	Observation
	P	revious	s Stabiliz	ed Paramete	ers: 03-12-09					0.350	7.08	-90.00	2.10	
0982	1015 s @ 80 pi	Saz		~ 250	59.24	21.5	17	1.52		1.35	6.48	-93	2.27	eclosless
0905		7	50	9	59.35	21.6		1.30	6	1.10	6.54	-148	2.22	•37
0908		15	00		59.38	21.0		1.29		6.45			2.19	*
0916		23	250		59.40	21.6	63	1.29		0.37	6.69	- 144	2.17	89
0914		30	000		59.40	21.		1.29		0.2		-137	2.15	8-8
0917		37	150		59.41	21.		1.29	_	0.3			2.14	2.8
Purge Start Time	Time	Avera Flo (mL/n	w nin)	Total Volume Purged (Liters)	Total Casing Volumes Purged	Leve	% Recovery Wat Level Depth (Dx0.20) + B		mplir (ft b	Level at ng Time	Sample Collection Time	S	ample Identific	cation
0902	0917	25	0	3.75	N/A		NA		5	1.41	7190	IRZCMW00	1_WG200906	609_01
votes: (uni	ts) [stabilization c	riteria]							especial de Maria de	-	DUI DRUM NO			



Project Nan	ne:	Boei	ng C-	6 Facilit	y, WDR Sa	mpling, Jun	ie-09		Da	ate:		19/09			
Project No.	:				1155.010				Pi	epared	by:	BLB.	•		
Well Identif	fication:	•			CMW002				W	eather:		vereust	ادما		
Measureme	ent Poin	ıt Deścript	ion:		TOC-N				Pt	ımp Inta		eos	Screen	: 99	- 124
A		В			С	D = C -	В	E =	B - A	G	= D x F	$\mathbf{H} = 25x$	F = (top s	creen-B) x F	
Depth to LNA (ft-bmp)	APL [Depth to St Water Lev (ft-bmp)			otal Depth	Water Col Height (IAPL ness (ft)	1	Casing ne (gallons)	Screen Volume (gallons)		e Screen me (gal.)	Total Purge Volume (gal.)
		60.71	3	1.	24	63.	22	400	ra _{sp}		N/A	N/A		N/A	N/A
***************************************					Gal	lons/Foot			Field Ed	quipment	t: QED, D	edicated Low-	flow		
Well Di	iameter ((inches) = 4		0.75	2	4	6		Purge N	/lethod:	Micropurge	9			
F - Gallo	ons per f	foot of casi	ng	0.02	0.16	0.65	1.47	7	Well Co	ndition:	ලියේ	,			
Time	(Settings Purged (Liters) Plow Rate (mL/min) Level (°C) (°C) (ft-bmp) [+/- 10%]		(mS	ictivity* /cm) 10%]	Dissolve Oxyger (mg/L) [+/- 10%	n pH [+/- 0.1 p⊢	ORP (mV) [+/- 10%]	Turbidity (NTU) [+/- 10%]	Observations					
	Previous Stabilized Parameters: 03-				ers: 03-12-09			0.	99	0.560	7.15	-38.00	1.30		
0720	10153	@80xi			250	60.78	21.	31	1.0	90	3.92			2.7	coluitess
0723			7	50	1	60.80	21.	54	1.0	13	1.9	6.03	-89	2.1	4
0727			L	000		£e .	21.		1.0	15	1.39	6.2	5 - 59	1.7	*
0730			2:	250		Se .	21.	65	1.0	(5	1.11	6.	- 43	1.6	•
0733			3	000		9.6	21	66	1.0	14	1.05	6.43	7 - 38	1.6	8 8
0735	~	4	3'	750		60.80	21.		1.0	14	1.07	6.52		1.5	9-6
Purge Start Time	1	rge End Time	Avei Flo	w	Total Volume Purged (Liters)	Total Casing Volumes Purged	80% Recovery Wate Level Depth (Dx0.20) + B		oth	Sampli	Level at ng Time	Sample Collection Time	s	ample Identifi	cation
0720		0735	~ 1	50	3.75	N/A		NA		60	-80	0735	CMW002_\	VG20090609	_01
Notes: (uni	its) [stal	bilization c	riteria]								DU DRUM N			



Project Nan		ing C-			mpling, Jun	e-09			ite:		6909			
Project No.				1155.010					epared	by:	303			
Well Identif	ication:			CMW026					eather:		ver east [Cool		
Measureme	ent Point Descrip	tion:		TOC-	N	· · · · · · · · · · · · · · · · · · ·		Pu	ımp Int	ake:	cos	Screen:	92 -	- 117
Α	В			С	D = C - I	В	E=	B - A	G	= D x F	$\mathbf{H} = 25 \times F$	= (top se	creen-B) x F	
Depth to LNA (ft-bmp)	APL Depth to S Water Le	vel		otal Depth -bmp)	Water Coli Height (APL ness (ft)		e Casing ne (gallons)	Screen Volume (gallons)		e Screen ne (gal.)	Total Purge Volume (gal.)
-	59.1	4	1	(¥	57.	86				N/A	N/A	1	N/A	N/A
				Gall	ons/Foot			Field Ed	luipmen	t: QED, D	edicated Low-fl	ow		
Well Di	iameter (inches) = 4		0.75	2	(4)	6		Purge N	lethod:	Micropurge	:			
F - Gallo	ons per foot of cas	ing	0.02	0.16	0.65	1.47	7	Well Co	ndition:	Good				
Time	Flow Controller Settings	Pu	lume rged ters)	Flow Rate (mL/min)	Water Level (ft-bmp)	(°C) (r		Condu (mS [+/-	/cm)	Dissolve Oxygen (mg/L) [+/- 10%]	pH [+/- 0.1 pH]	ORP (mV) [+/- 10%]	Turbidity (NTU) [+/- 10%]	Observation
			ıs Stabili	zed Paramete	ers: 03-12-09			2.	15	0.340	6.73	-135.00	2.60	
0824	10153@75ps	. (0	250	59.14	21.13	5	1.	94	3.3	6.69	-97	2.77	colonizes
0827		7	50		59.20	21.3			92	2.11	6.59	- 121	2.72	,
0830		15	00		59.29	21.5	3	1	40	0.33			2.69	
0833		22	150		59.30	21.5	2	1.	90	0.23		- 177	2.68	
0836		30	9 60		59.32	21.5	53	l	.90	0.23	6.33	-182	2.67	
0839		37	f50		59.34	21.	53	Į.	90	0.21	6.33	-183	2.67	2_
Purge Start Time	: Purge End Time	Flo	rage ow min)	Total Volume Purged (Liters)	Total Casing Volumes Purged	80% Recovery Wat Level Depth (Dx0.20) + B			Sampli	Level at ing Time omp)	Sample Collection Time	S	ample Identifi	cation
0824	0839	2	50	3.75	N/A		NA		5	9.34	0839	CMW026_V	VG20090609	_01
	its) [stabilization	criteria]	_	I: 1.3	7					DUI DRUM NO			



QED MP-20DT RENTAL CALIBRATION CERTIFICATE

SERVICE TECHNICIAN: TH

DATE: 6/8/09

INSTRUMENT INFORMATION

RENTAL I.D. NUMBER: MP-20D .04

SERIALNUMBER:

CALIBRATION INFORMATION

PARAMETERS:	STANDARDS:	PASS()	LOT#
1. CONDUCTIVITY	μMhos	_	6431
2. pH ZERO	pH 7	<u> </u>	180857
3. pH SLOPE	pH 4		280741
ph SLOPE	pH 10	<u>/</u>	180707
4. DISSOLVED OXYGEN	Air Calibration Barometric pressure = 760mmHg		n/a
5. DISSOLVED OXYGEN ZERO TEST	(sodium sulfite)		
6. TURBIDITY ZERO	0.0 NTU's	_	100A
7. TURBIDITY SPAN	20 NTU's		5070A
8. REDOX (ORP)	237.5 mV (YSI Zobell solution)		051107



QA/QC SAMPLE IDENTIFICATION FORM

		1
Project Name:	Boeing Former C-6 Facility, Building 2 WDR Groundwater Monitoring, June 2009	Project No.: 1155.010
<u> </u>		Library Control of the Control of th

Date	Time	QA/QC Sample Type (Duplicate, Field Blank, Equipment Blank, Split)	Sample ID	Sample Location	Primary Sample Reference	Analytical Methods	Organic-Free Water Source	Field Personnel	Comments
.06/09/09	-	Trip Blank	TB_AV20090609_01	-		8260B	TA-I	ВСВ	
06/09/09	11:36	Duplicate:	IRZCMW002_WG20090609_02	IRZCMW002	IRZCMW002_WG20090609_01	8260B		BCB:	
	era wara wara wara waka waka					a.m.	***************************************	· coommence and a construction of the construc	
				eiieeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeee				····	

unitarido de misente e de militario de misente e de militario de misente e de co	***************************************	occesioni in also dentine de sel minimi de dentine de salimente de minimi e de salimente ad escinacio de salimente de sali					***************************************		
	urrivolariroissiuriusisoisainolarean		***************************************	wax horocontronocontronocontronocontronocontronocontronocontronocontronocontronocontronocontronocontronocontro					***************************************
			***************************************	······································					
	***************************************		wei-	market and the second			acconversionismost actest actest actest actest actes a	······································	eccessivated karinelus kerkerine kerkerinelus kerkerinelu
	***************************************	une confinción de lecitación de desirbo de administrator de administrator de administrator de administrator de		ecoluciumisci saineinal soinnisei saineinal soinnisei saine		a occoluminatocionimetrosiminatocionimetrosiminatocionime		***************************************	eviriento exchante do sectionis e do discinción fiscado de dos fiscados de chantes do decidade e dos fiscados de chantes
	***************************************			***************************************			***************************************	erestament arangement arangement arangement arangement arangement arangement arangement arangement arangement a	
	***************************************			w*************************************					
		***************************************					••••••••••••••••••••••••••••••••••		
		***************************************				••••••••••••••••••••••••		ecchainchahadachainchainchadachainchainme	
nerennerenerenerenerenerenerenereneren	ucensturiumi veirminui noi veirminei veen						***************************************	• Cultural control con	
	***************************************							***************************************	
enivel schedisched schedisched schedisched schedisches bes	***************************************	***************************************	escurreiro de circinale e inclueiro de criscia e inclueiro de circina de criscia de cris	***************************************			oceccanic vide nicular nice nace nice nice nice nice nice nice nice ni	······································	everanced schred
nina kanina ilanina kanina ilanina kanina kanin		***************************************		we'r common comm				**************************************	
maine de militario de de militario de militario de militario de militario de militario de militario de militari						overdanie den kralianie dan kr		***************************************	

		ļ ,				l			

SNProjects\1155 Boeing Former C-6 Facility\Groundwater Monitoring June 2009/19aqc sample id form_20090609.xls|Sheet1

16 Technology Drive, Suite 154 Irvine, California 92618-2327 TEL (949) 296-0977 FAX (949) 296-0978

TSF0935 Sheet 1

Boeing CoC No. AV20090609A

CHAIN OF CUSTODY RECORD

Analyses

•														Ar	naiysi	9S					
ndina	y, 82 WC	OR Sampli			e0B	30 Modified	Acids 24 Hr HT 123G (Microseeps)	Irocarbon Gases (DHGs) ane, Ethene - RSK 175	:320B	NO2, CI, SO4) EPA 300.0	hromium	slas	ŭ	pPCR analysis 24Hr HT					Please forward VFA & qPCR analyses to identified laboratories ASAP.		
n s	Sample Date	Sample Time	Matrix	No. of Cntnrs.	·Lab I.D. Number		VOCs EPA 82	TOC EPA 900	Volatile Fatty IC Method 8N	Dissolved Hyo Methane, Eth	Alkalinity SM2	Anions (NO3,	Hexavalent C EPA 7199	Dissolved Me EPA 6010B	Total Dissolve	DHC 16S by (North Wind)	Chlorides				Comments
0	6/09/09	0735	WATER	11 ~			Х	X	х	X	Х	X			X	X					
0				116			х	Х	X-	Х	·X	X				х					
			WATER	11			X	X	х	Х	X	Х		•		х					•
0	6/09/09		WATER	3 🗸			х														
0	6/09/09	1190	WATER	ں 11	-		X	X	X	X	х	X			X	X					
0	6/09/09	1025	WATER	L			X	Х	X	Х	X	Х				X					
. 0	6/09/09		WATER	/1	,		X	. X	x	х	X.	χ				X					
0	6/09/09	-	WATER	3			х		•							:					
										:			•								
																					•
	es, CA endina TAT 0 0 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0	Pas, CA Parameter Sample Date 06/09/09 06/09/09 06/09/09 06/09/09 06/09/09 06/09/09	Pas, CA Part Sample Date Time 06/09/09 0735	Pas, CA Part Sample Date Time Matrix 06/09/09 0735 WATER 06/09/09 0839 WATER 06/09/09 1136 WATER 06/09/09 1136 WATER 06/09/09 0917 WATER 06/09/09 1025 WATER 06/09/09 1025 WATER	Sample Date Sample Time Matrix No. of Coturns.	Page 2015 And Andrew Page 2015 Andrew Pa	Pas, CA Part Sample Date Sample Matrix No. of Control Number 06/09/09 0735 WATER 11 11 11 11 12 13 14 14 15 15 15 15 15 15	### Park	### Park	### Page 2 Page 2 Page 3 Page 3	Pas, CA Parameter Sample Date Time Matrix No. of Cntr. S. Number O6/09/09 0735 WATER 11	Sample Sample Date Time Matrix No. of Cntnrs. Number Number No. of Cntnrs. Number Number No. of Cntnrs. Number Number	Sample Sample Date Time Matrix No. of Cntnrs. No. of Cntnrs.	Sample Sample Date Time Matrix No. of Cntnrs. Number No. of Cof.09/09 Nate Nate	Sample Date Time Matrix No. of Controls Number Number Controls Number Controls Number Controls Number Number	Sample Date Time Matrix No. of Cntrrs Number Number Chetted BM32 (Microseebs) Number Number	Sample Sample Time Matrix No. of Cntnrs. No. of Cntnrs. No. of Cof.09/09 No. of Cntnrs. No	Sample Sample Date Time Matrix No. of Cnturs. Number No. of Cotons Number Number No. of Cotons Number Number No. of Cotons Number Number No. of Cotons Number Number No. of Cotons Number Number	Sample Sample Date Time Matrix No. of Chtnrs. Number Choque, but Cho	### C-6 Facility, B2 WDR Sampling, June 2009 Sample	### C-6 Facility, B2 WDR Sampling, June 2009 Sample

Relinquished by	Company ·	Received by	Company	ŧ
Printed Name: Byon Ecosuman Date: 619 09	Avocet Environmental, Inc.	Printed Name: Oam Lode	Date: 6-9-09	
Signature: PUCE AUU Time: [425	Avocet Environmental, inc.	Signature: Som Weeld	Time: 1425	
Printed Name: SAm DIDD Date: (g-9-0)		Printed Name: Tr your News	NDate: GIGION -TIT	
Signature: Samueld Time: 3:(5p)	•	Signature:	—Time: 1515 [A]	
Printed Name: Date:		Printed Name:	Date: . '	
Signature: Time:		Signature:	Time:	

nple Receipt	Billing Information	_
tal Containers	Michael Rendina, P.G.	Michael Rendina, P.G.
mperature °C 4.3	BIII To: AVOCET ENVIRONMENTAL, INC. 16 Technology Dive, Suite 154	
DC Seal (Y/N/NA)	Irvine, CA 92618-2327	

DHC PCR Analyses require overnight delivery to NorthWind in Pittsburgh, PA Primary DHG analyses will continue to be analyzed by ATL. Please bill to Avocet. Please report electronically in accordance with Boeing standards. If any questions, please call Mike Rendina @ (949) 296 0977 Ext.103